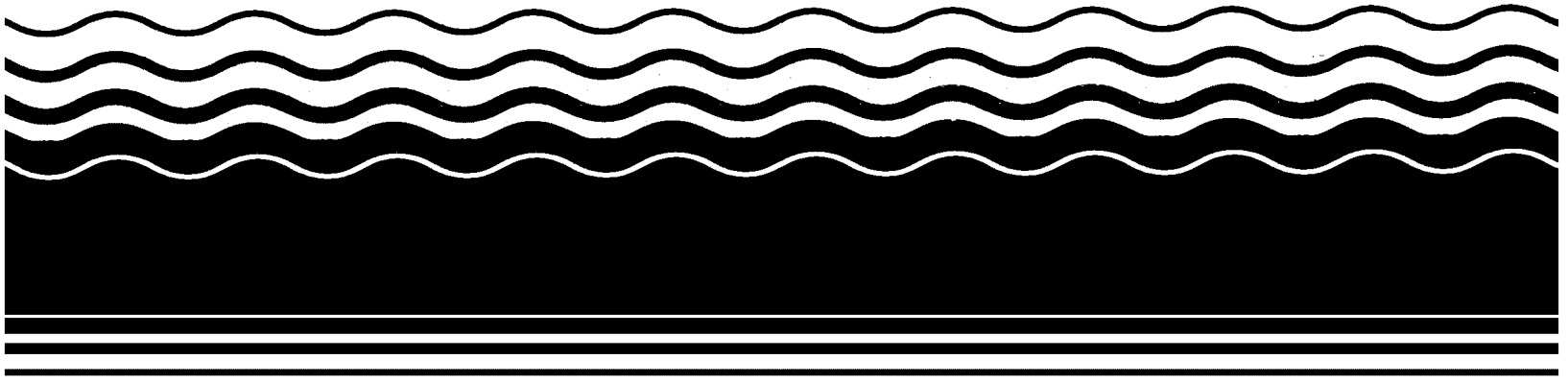
PB95-964605
EPA/ROD/R10-95/110
June 1995

EPA Superfund Record of Decision:

Hamilton Island Landfill (USA/COE) (OU 1), North Bonneville, WA 3/30/1995



FINAL

RECORD OF DECISION
Hamilton Island, Washington

Prepared for

Seattle District
U.S. Army Corps of Engineers
4735 East Marginal Way South
Seattle, WA 98124

March 1995

Woodward-Clyde
1500 Century Square
1501 Fourth Avenue
Seattle, WA 98101

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DECLARATION OF THE RECORD OF DECISION

Site Name and Location: Hamilton Island
Skamania County, Washington

Statement of Basis and Purpose

This decision document presents the selected final remedial action for Hamilton Island, Skamania County, Washington. This selected remedy was chosen in accordance with the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA) and to the extent practical, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). This decision is based on the administrative record for the site.

The lead agency for conducting RI/FS activities at Hamilton Island is the U.S. Army Corps of Engineers (USACE) with the authority and responsibility for implementing the decisions and directives of the Department of the Army under the Federal Facility Agreement. The U.S. Environmental Protection Agency (EPA) and the State of Washington Department of Ecology (Ecology) participated in the scoping of the site investigation and in the evaluation of the remedial investigation data. The USACE and EPA, in consultation with Ecology, have jointly determined that no remedial action is necessary at this site. Ecology concurs with this determination.

Description of the Selected Remedy

EPA has determined that no remedial action is necessary at Hamilton Island to ensure protection of human health and the environment. This decision is based on the results of the human health and ecological risk assessments, which determined that conditions at the site pose no unacceptable risks to human health or the environment. Long term monitoring is not required.

Declaration

EPA has determined that no remedial action at the site is necessary to protect human health or the environment, and thus EPA's response at this site is complete. Therefore the site now qualifies for inclusion on the Construction Completion List.

State of Washington Declaration

Ecology has concluded that the No Action Proposal protects human health and the environment at Hamilton Island now and in the future. The state will de-list Hamilton Island from the state's Hazardous Sites List.

Signature sheet for the foregoing Hamilton Island Record of Decision between the Department of the Army and the U.S. Environmental Protection Agency, with concurrence by the State of Washington Department of Ecology.

Chuck Clarke

3/30/95

Chuck Clarke
Regional Administrator, Region X
U.S. Environmental Protection Agency

Date

Signature sheet for the foregoing Hamilton Island Record of Decision between the Department of the Army and the U.S. Environmental Protection Agency, with concurrence by the State of Washington Department of Ecology.

Ernest J. Harrell
Major General, U.S. Army
Division Engineer

14 Mar 95
Date

Signature sheet for the foregoing Hamilton Island Record of Decision between the Department of the Army and the U.S. Environmental Protection Agency, with concurrence by the State of Washington Department of Ecology.

Mary E. Burg — 22 March 1995

Mary Burg, Program Director — Date
Toxics Cleanup Program
Washington State Department of Ecology

DECISION SUMMARY

Site Name and Location: Hamilton Island
Skamania County, Washington

1.0 INTRODUCTION

Hamilton Island was listed on the National Priorities List (NPL) in 1992 under the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA).

In accordance with Executive Order 12580 (Superfund Implementation) and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), the U.S. Army Corps of Engineers (USACE) performed a Remedial Investigation for Hamilton Island. The Remedial Investigation (RI) characterized the nature and extent of contamination in soil, groundwater, surface water, sediments and seeps. A Human Health Risk Assessment and an Ecological Risk Assessment were conduced in 1994 to evaluate potential effects of the landfill contaminants on human health and the environment, respectively. Based on the results of the RI, the Human Health Risk Assessment and the Ecological Risk Assessment, no further remedial action under CERCLA is necessary to ensure protection of human health or the environment.

This decision summary provides an overview of the site, site characteristics, summary of site risks, a description of the selected remedy, highlights of the Community Participation Program, an explanation of significant changes to the Proposed Plan issued for public comment on November 4, 1994, and a responsiveness summary. This document has been prepared in accordance with the EPA directive Guidance in Preparing Superfund Decision Documents (OSWER Directive 9355.3-02).

2.0
SITE NAME, LOCATION AND DESCRIPTION

The Hamilton Island NPL site is located between 1.5 and 2.5 miles downstream of the Bonneville Dam on the Washington shore of the Columbia River (Figure 1). The site is bordered on the east and south by the Columbia River, on the west and northwest by Hamilton Creek, and on the northeast by the city of North Bonneville and a filled area which was formerly Hamilton Slough. The area defined as the Hamilton Island NPL site encompasses approximately 226 acres and includes the Hamilton Island disposal area and a Wildlife Mitigation Area (Figure 2).

Prior to placement of excavated soil and other debris generated by the construction of the Second Powerhouse for Bonneville Dam, Hamilton Island was an elliptical 250-acre area surrounded by the waters of Hamilton Slough, the Columbia River, and Hamilton Creek. The island was a low floodplain area with an approximate maximum elevation of 50 feet above mean sea level (fmsl).

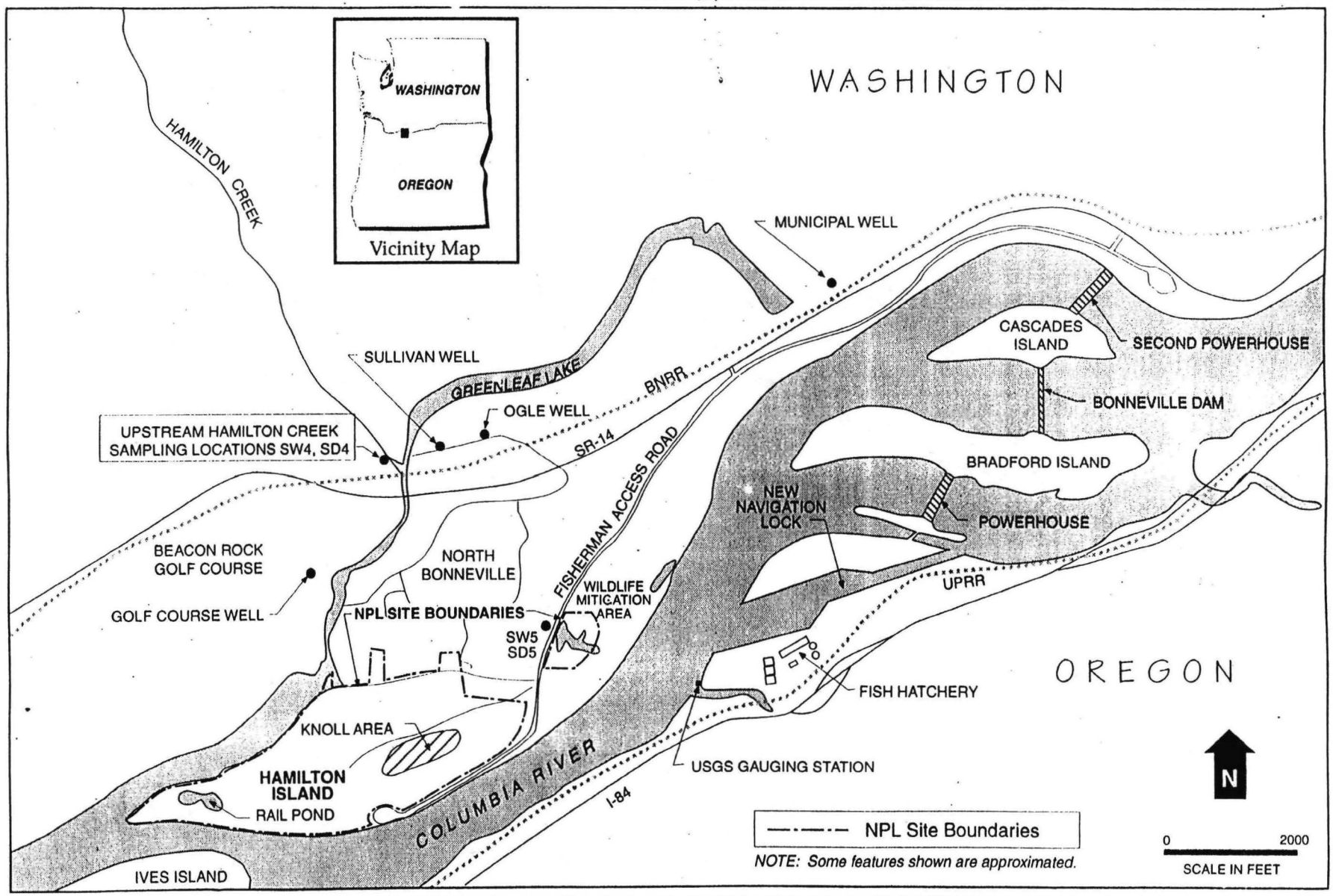
The filling of Hamilton Slough connected Hamilton Island to the Washington shoreline of the Columbia River, making the former island now the southwestern tip of a northeast-trending peninsula. The area, still referred to as Hamilton Island, is now an elliptical mound. The island was constructed so that a ridge extends northeast to southwest with the highest point located at the center of the island. The ground surface elevation varies from the original ground surface of approximately 50 fmsl to a maximum of approximately 160 fmsl in the Knoll Area. A topographic map of the site is shown on Figure 2.

Two portions of the site - the Knoll Area and the Wildlife Mitigation Area - are fenced. The Knoll Area is accessed from a gate at the eastern corner of the site at the Fisherman Access Road. The Wildlife Mitigation Area is accessed from a gate at the southeast corner of the fenced area. Hamilton Island is accessible to vehicular traffic by an unimproved dirt road extending south from the city of North Bonneville.

Hamilton Island is located in the designated Columbia River Gorge Natural Area. This area is a unique geographical feature with great ecological and biological importance. The

Columbia River in the vicinity of Hamilton Island provides essential habitat for salmon, steelhead trout, white sturgeon, American shad and the Pacific lamprey. The Columbia River below Bonneville Dam is an area frequented by fishermen. The area in the vicinity of Hamilton Island provides habitat for songbirds and raptors.

Within the soil and debris deposited on Hamilton Island, perched groundwater occurs as discontinuous lenses that in some places discharges to the surface as seeps. Perched groundwater on Hamilton Island is limited and insufficient to support water supply wells. One aquifer has been identified at the site. It is described in Section 4.1.3.



Project No. 93C0544/8000	HAMILTON ISLAND Washington	SITE LOCATION MAP Hamilton Island RI/FS	FIGURE 1
Woodward-Clyde			

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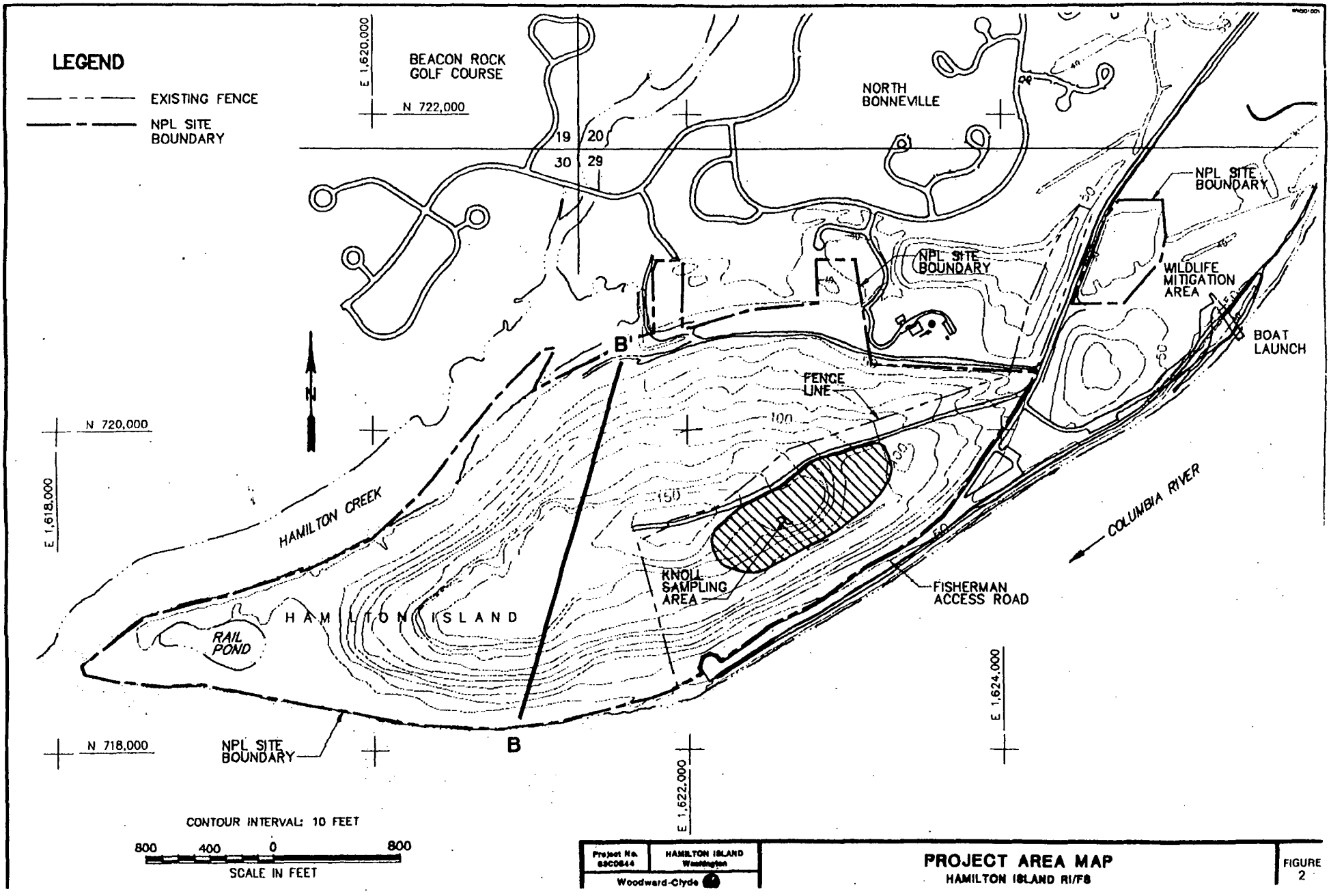

LEGEND
EXISTING FENCE
NPL SITE BOUNDARY
BEACON ROCK GOLF COURSE
E 1,620,000
N 722,000
NORTH BONNEVILLE
19
20
30
29
NPL SITE BOUNDARY
WILDLIFE MITIGATION AREA
BOAT LAUNCH
B'
FENCE LINE
N
N 720,000
E 1,618,000
HAMILTON CREEK
COLUMBIA RIVER
KNOLL SAMPLING AREA
FISHERMAN ACCESS ROAD
HAMILTON ISLAND
RAIL POND
E 1,624,000
N 718,000
NPL SITE BOUNDARY
B
E 1,622,000
CONTOUR INTERVAL: 10 FEET
800 400 0 800
SCALE IN FEET
Project No. 86C0844
HAMILTON ISLAND Washington
Woodward-Clyde
PROJECT AREA MAP
HAMILTON ISLAND RI/FS
FIGURE 2

3.0
SITE HISTORY AND ENFORCEMENT ACTIVITIES

3.1 SITE HISTORY

Between 1977 and 1982, Hamilton Island was used as a disposal site for soil material excavated during construction of the Bonneville Dam Second Powerhouse. Approximately 19 million cubic yards of soil and rock material were placed on Hamilton Island during construction. In addition to soil and rock material, about 100,000 cubic yards of demolition and construction debris and other miscellaneous materials were disposed on the island. Based on interviews and record reviews, it appears that occasional placement of this type of debris material on the island occurred throughout construction of the Second Powerhouse. A significant percentage of debris disposal occurred in an area known as the Knoll Area towards the end of the construction period. During this period, contractors cleared miscellaneous debris from the construction site. Wooden concrete forms, concrete, and steel reinforcing rod are known to have been placed in the Knoll Area.

In 1986, a seep with discolored water was discovered on the southeast side of the Knoll Area by USACE. Analysis of a seep sample revealed the presence of metals, organic solvents, pesticides, wood preservatives and organic chemicals. In 1987, the EPA and USACE conducted a preliminary site survey, and collected seep, sediment and soil samples. As a result, it was determined that hazardous and toxic chemicals may be present. The survey estimated that contamination likely would be limited to 24 acres on the southeastern side of the Knoll Area.

In January 1988, EPA concluded that no immediate action was warranted at the site, but that further investigations were necessary. Hamilton Island was placed on the Federal Facilities Hazardous Waste Compliance Docket in the February 12, 1988 Federal Register.

The Portland District USACE conducted a field sampling program on Hamilton Island as part of a Site Inspection (SI) during the time period May 1988 to August 1989. Surface water, groundwater, and soil samples were collected and analyzed for various constituents including volatile and semi-volatile organics, pesticides, polychlorinated biphenyls (PCBs)

and metals. Concentrations exceeding risk-based screening criteria of some analytes were detected in surface water and perched groundwater samples. Cadmium, copper, chromium, lead and zinc concentrations that exceeded primary or secondary drinking water standards were detected in unfiltered surface water samples. Toluene and benzoic acid concentrations that exceeded freshwater Ambient Water Quality Criteria also were detected in surface water. Total arsenic, copper, chromium and lead concentrations that exceeded primary or secondary drinking water standards were detected in perched groundwater samples.

3.2 ENFORCEMENT ACTIVITIES

EPA proposed listing the site on the NPL under the NCP in the July 29, 1991 Federal Register. Hamilton Island was placed on the NPL on October 14, 1992. The basis of the listing was a possible release to the Columbia River of runoff from a culvert with concentrations of copper above freshwater Ambient Water Quality Criteria, a possible release to the Wildlife Mitigation Area of runoff from a culvert with elevated levels of toluene and zinc, and a possible release to Hamilton Creek from a seep with concentrations of arsenic and lead above freshwater Ambient Water Quality Criteria. These possible releases were deemed significant because the Columbia River, a designated National Scenic Area, is regarded as a sensitive ecological area, and because Hamilton Island is located immediately adjacent to the city of North Bonneville.

Under CERCLA, the USACE entered into a Federal Facility Agreement with EPA Region 10 and Ecology on September 24, 1993 to complete a Remedial Investigation and Feasibility Study (RI/FS) and to implement any subsequent remedial action that may be defined in the Record of Decision (ROD). The Federal Facility Agreement outlines the process and interagency responsibilities for this study.

3.3 RI/FS PROCESS

The RI was conducted by the Portland District of USACE with assistance from the Seattle District and their contractors. The RI process included:

- Site Characterization
- Human Health and Ecological Risk Assessments

- Community Participation Program
- Support for the Selected Remedy

These components of the RI process are presented in Sections 4.0 through 7.0. No CERCLA removal or remedial actions had been taken at Hamilton Island prior to this RI.

A Feasibility Study that developed Remedial Action Objectives and evaluated alternatives was not performed at this site since the RI indicates no remedial actions are necessary to ensure protection of human health or the environment.

4.0
SITE CHARACTERIZATION

Data and information collected during the RI were used to evaluate potential adverse risks to human health and the environment, and support selection of the preferred remedy. These data and information are summarized in this section. A characterization of the surface water, geology, hydrogeology and ecology are presented in Section 4.1. Section 4.2 describes potential sources of contamination, and the nature and extent of contamination is discussed in Section 4.3.

4.1 SITE CHARACTERISTICS

4.1.1 Geology

The original ground surface of Hamilton Island was the remnant of a river terrace. The sediments comprising the terrace indicate that it originated as an outwash plain deposited approximately 800 years ago after the Columbia River breached the Bonneville Landslide. The site stratigraphy is shown in Figure 3 and a discussion of each unit is presented below.

Hamilton Island Fill

The fill placed on the island between 1978 and 1982 consisted primarily of material excavated during construction of the Bonneville Dam. The fill material is composed of soils and large boulders from several geologic units. It is an unsorted and unconsolidated mixture of well-weathered material.

Excavation and drilling performed during the RI exposed some minor amounts of construction and demolition debris throughout Hamilton Island. It was concentrated, however, in the Knoll Area. Debris encountered in the Knoll Area included plastic, metallic items such as cable and wire, lumber, household refuse, external automobile parts (reflectors, mirrors, etc.), steel shapes and pipe, rebar, and other miscellaneous benign items. With the exception of a few rags stained with motor oil and an automobile oil filter,

no wastes containing solvents, wood preservatives, paint, oil, degreasers, or any other potential contaminants were observed.

Recent River Deposits (RRD) Unit

The RRD unit is the uppermost on-site geologic unit underlying the fill material. The unit is comprised of materials deposited after the Bonneville Landslide. The unit consists of stratified layers of alluvial sediments ranging in size from clay to very large boulders. The top of the unit ranges from approximately 25 feet mean sea level (fmsl) on the south side of the island near the river to 45 fmsl on the north side. The base is at approximately 15 fmsl.

Pre-Bonneville Landslide Alluvium (PBA) Unit

The PBA unit underlies the RRD unit and can be distinguished from the RRD unit by a lack of slide materials which indicates the PBA unit was deposited prior to the Bonneville Landslide. The top of the PBA unit is located at about 15 fmsl and the bottom elevation is unknown. The PBA unit can be divided into three general subunits: PBA-1, PBA-2, and PBA-3. PBA-1 consists of micaceous sands and blue silts. PBA-2 unit consists of abundant gravel interbedded with layers of fine to medium, clean, micaceous sands. PBA-3 unit, which is the lowermost PBA subunit, consists of sand and fine-grained materials similar to those in PBA-1. PBA-1 and PBA-2 are shown on Figure 3. None of the borings drilled during the RI investigation penetrated the PBA-3 unit, and it is not included in the geologic cross-section (Figure 3).

4.1.2 Surface Water

Surface water runoff from Hamilton Island collects in several ditches that direct the runoff into either the Columbia River, Hamilton Creek, the Rail Pond, or the Wildlife Mitigation Area. Surface water drainage patterns are shown on Figure 4.

4.1.3 Hydrogeology

One groundwater aquifer has been identified at Hamilton Island. This unconfined aquifer is located in the RRD and the PBA units. For conceptual purposes, the aquifer is separated

into an upper and lower portion because the screening intervals for the 12 onsite wells range over a 160-foot vertical distance (12 to -147 fmsl), and a vertical hydraulic gradient has been observed.

Groundwater recharge in the study area occurs as infiltrating precipitation and lateral inflow from the Columbia River and Hamilton Creek. Groundwater discharge in the study area occurs as evapotranspiration, seeps along Hamilton Island, and lateral flow to the Columbia River and Hamilton Creek. The Columbia River is a significant recharge/discharge point. Near Hamilton Island, the Columbia River bottom is approximately -65 fmsl, which may enhance the hydraulic connection between the river and deeper groundwater.

Because of the proximity of the Columbia River and the frequent and large changes in river level, or stage, caused by operation of the Bonneville Dam, the groundwater flow system at the site is variable. At the time of data collection, groundwater was recharging the river. In the upper portion of the aquifer, a groundwater velocity of approximately 0.02 ft/day was estimated, and groundwater was flowing in a southwest direction. In the lower portion of the aquifer, a velocity ranging from 0.1 to 0.3 ft/day was estimated; groundwater was flowing in a southeast direction.

A consistent upward flow direction was observed on the northern portion of the island, and both an upward and downward flow direction were observed at the well pairs located closer to the river. From the available groundwater data, a vertical groundwater velocity was estimated ranging from an upward velocity of -0.2 ft/day to a downward velocity of 0.1 ft/day.

Groundwater movement at Hamilton Island is highly influenced by changes in the level, or stage, of the Columbia River. Because the available groundwater elevation data correspond to a small range of river stage elevations (12 to 16 fmsl), and the Columbia River stage can vary over a much wider range (6 to 30 fmsl), the modeled groundwater flow direction, hydraulic gradient, and velocity reflect only one possible scenario with regards to groundwater flow characteristics. The extent of the variability of the flow characteristics cannot be quantified with the available data. In addition, the model is probably not representative of groundwater conditions away from the river.

4.1.4 Ecology

Hamilton Island is located in the designated Columbia River Gorge National Scenic Area. This area is a unique geographical feature with great ecological and biological importance. The plant and animal communities in the gorge are presented below.

Flora

Plant community types within the gorge exhibit a transition from dry sagebrush and ponderosa pine communities of the eastern Cascades to moist Douglas fir communities of the western Cascades. Three overlapping zones of vegetation occur in the gorge and in the vicinity of Hamilton Island. A *river bank zone* occurs along the banks of the Columbia River; a *floodplain zone* lies generally south of the Burlington Northern Railroad tracks between the old city of North Bonneville and Beacon Rock; and an *upland zone* occurs north of the railroad. Hamilton Island is located in the river bank and floodplain zones described below. There are no threatened or endangered plant species on Hamilton Island.

The river bank zone vegetation, located along the north bank of the Columbia River in the site vicinity, is generally limited to woody species. Fluctuations in water levels, high currents, and shallow, rocky soils limit the growth of these species to shrub forms.

The floodplain zone includes a variety of riparian, pasture, and upland communities that have been greatly influenced by grazing, logging, and recreational activities. Pasture and riparian communities are generally located nearest the river on well-watered sandy or loamy soils.

Wetlands located within the Hamilton Island NPL boundaries include the rail pond, on the western point of Hamilton Island, the riparian and flood plain areas adjacent to Hamilton Creek and the Columbia River, and small isolated areas adjacent to seeps near the fill area on Hamilton Island.

Fauna

The Columbia River in the vicinity of Hamilton Island provides essential habitat for anadromous chinook, coho, chum, and sockeye salmon; steelhead trout; white sturgeon; and American shad and Pacific lamprey.

The shallow, rocky soils, fluctuating water levels, and limited vegetation growth typical of the river bank vegetation zone support a limited diversity and abundance of wildlife species. The more protected shallow water areas near the mouth of Hamilton Creek contain aquatic plants, provide more abundant and diverse food and cover resources, and thus, are more productive habitats.

The floodplain vegetation zone includes the riparian, shrub/scrub, grassland communities, and wetland habitats. Communities of small mammals, songbirds, raptors and large mammals are abundant in this area. The floodplain zone also provides habitat for several species of special concern. The Canada goose, bald eagle, osprey, great blue heron, and the American peregrine falcon may feed and rest in this part of the gorge. Canada geese and ducks also nest, brood, rest, feed and winter in this area. Although some federally listed threatened or endangered species use Hamilton Island for feeding and resting, none reside permanently on the site.

4.1.5 Land Use and Demographics

The city of North Bonneville is the only development within the study area. The city's population is estimated to be approximately 400 persons. The municipal water supply is completely reliant on one active groundwater supply well located in the city. Approximately 11 private groundwater supply wells are located within a 1-mile radius of the NPL site boundary. The municipal well and three of the private wells were sampled during the RI field investigation. Results are discussed in Section 4.3.4.

The Columbia Gorge is a transportation corridor through the Cascade Range for river navigation, railroads, and highways. The gorge, a federally designated National Scenic Area, is an important resource for tourism and recreation. Under this designation, future

land use development is controlled. The city of North Bonneville is designated as one of the few urban areas in the gorge where future development can occur.

4.2 SOURCES OF CONTAMINATION

The approximately 19 million cubic yards of soils and other earthen materials deposited on Hamilton Island during construction of the Bonneville Dam Second Powerhouse were naturally occurring, clean material not known or suspected to be contaminated by any anthropogenic sources. Demolition and construction debris (approximately 100,000 cubic yards) buried with soil material are the potential sources of contamination at Hamilton Island. The following discusses potential areas of contamination and types of debris that may be sources of contamination.

4.2.1 Potential Areas of Contamination

In large part, field investigations for the RI were designed to locate, delineate, and characterize areas of potential debris placement. For this reason, the island was subdivided into six general areas of investigation according to the history of fill placement: Cells 1 through 5, and Parcel B (Figure 5). Within these six general areas are locations where demolition and construction debris are thought to be concentrated. These locations have a higher probability of being sources of contaminants, and include the Knoll Area in Cells 1 and 2, two areas believed to contain demolition debris from the former city of North Bonneville (TDA #2 in Cell 1 and TDA #1 in Cell 5), and a Construction Staging Area along the northern edge of Hamilton Island in Parcel B. The results of pre-RI data, aerial photographs, personnel interviews, and a geophysical survey were used to refine the location of previously identified areas and to identify other potential debris disposal areas. The sampling program was designed to evaluate potential source areas by means of soil borings, monitoring wells, test pits, and trenches.

4.2.2 Potential Contaminant Sources

The demolition debris and construction wastes disposed at Hamilton Island are believed to consist predominantly of wood, concrete, and steel rebar. No evidence of disposal of hazardous substances was revealed by either the personnel interviews or examination of

aerial photographs. Some refuse was observed on the ground surface within the study area, apparently originating from unauthorized disposal of municipal waste. It is possible that small quantities of hazardous substances could have been included with disposed debris or illegally-dumped municipal waste.

4.3 NATURE AND EXTENT OF CONTAMINATION

Because of uncertainty about procedures and protocols used for sample collection, laboratory analysis, and monitoring well installation and development, the data collected from 1986 to 1990 were not used for either the RI risk assessments or to evaluate the nature and extent of potential contamination at Hamilton Island.

During the RI field investigation, 168 soil and 87 water samples were collected from the sampling locations shown on Figure 6. Soil and sediment samples were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds, organochlorine pesticides, polychlorinated biphenyls (PCBs), total petroleum hydrocarbons (TPH) and metals. Surface water, groundwater and seep samples were analyzed for the same organic compounds, as well as total and dissolved metals and selected water quality parameters. To assess the presence of contaminants, analytical results were compared with background metal concentrations and regulatory-derived criteria. (See the "Hamilton Island Disposal Site Background Study Report, Bonneville Dam Area" in the Administrative Record for values of naturally-occurring metals in the Hamilton Island region.) Regulatory-derived screening criteria used in the RI are potentially applicable federal and state risk-based concentrations that are considered protective of human health and the environment. This is discussed further in Section 5.1, Summary of Site Risks.

The criteria used for this RI are EPA Region 3 risk-based concentrations (RBCs) and Ecology Model Toxic Control Act (MTCA) Method B target cleanup goals. EPA Region 3 RBCs are the most current screening-level criteria for any EPA region and are used as a reference by EPA Region 10.

4.3.1 Soils

During the RI field investigation 168 soil samples were collected from 21 soil borings, 16 test pits, and four trenches. Samples were taken at depths ranging from 0.5 feet below ground surface to a maximum depth of 121.5 feet below ground surface. Evidence of anthropogenic contaminants in site soil samples is limited to isolated volatile and semi-volatile organic compounds at relatively low concentrations, and generally isolated occurrences of petroleum hydrocarbons. Organochlorine pesticides and PCBs were not detected in any soil samples.

Several volatile and semi-volatile organic compounds were detected in soil samples, mostly in the Knoll Area. Some of these compounds may be derived from associated petroleum hydrocarbons. All detected volatile and semi-volatile compounds in soils are below screening criteria concentrations with the exception of four semi-volatile compounds in two field duplicate samples (one from the Knoll Area and one from Parcel B). The detections only slightly exceed the criteria, and the compounds were not detected in the associated primary samples. See Section 5.1.1 for discussion of these detections.

Total petroleum hydrocarbons in (TPH) soils are the most significant chemical contaminants found on the Hamilton Island NPL site. Isolated occurrences of TPH were detected in soil throughout the site. The regulatory criterion (MTCA Method A cleanup level of 200 mg/kg) for TPH was exceeded only in the Knoll Area (four samples at three locations).

To evaluate the extent of petroleum hydrocarbons in soils, Ecology suggested that additional samples be collected in the Knoll Area. Although petroleum hydrocarbons are not regulated as a potential contaminant of concern by EPA under CERCLA, they are regulated by Ecology under MTCA. Based on the additional sampling, it was concluded that contamination exists sporadically in a small, isolated area, and that contamination was not widespread in the Knoll Area or elsewhere on Hamilton Island. Because no definable area of contamination could be found, Ecology advised the USACE that no further investigation or removal of contaminated soil would be required under MTCA.

With the exception of manganese, metal results for soils are below either screening criteria concentrations or site-specific background concentrations. About one-half of the manganese

results exceeded the screening criterion concentration. Observed concentrations of manganese in soils are, however, consistent with derivation from the basaltic lithologies that typify the Columbia River Gorge.

4.3.2 Sediments

No VOCs, organochlorine pesticides, or PCBs were detected in the nine sediment samples collected during the RI field investigation. The semi-volatile compound bis(2-ethylhexyl)phthalate was detected in one sample. This compound is considered to be a sample contaminant introduced either during sampling or in the laboratory. Petroleum hydrocarbons were detected in one sample below the screening criterion concentration. The sample site is located next to a well-traveled public access road and the petroleum hydrocarbons may be related to non-site sources. Results for metals detected in site sediment samples generally do not differ significantly from the background sediment sample.

4.3.3 Surface Water

Two sampling rounds were conducted at eight surface water and five seep sampling locations. No organochlorine pesticides, PCBs, or petroleum hydrocarbons were detected in surface water samples, with the exception of a single detection of a VOC and a semi-volatile organic compound. The VOC, carbon disulfide, was detected in the Rail Pond sample. There are no surface water screening criteria for carbon disulfide. The compound was not detected in any site soil, sediment, seep or groundwater samples and is likely not an anthropogenic contaminant derived from the site. Analytical results for water quality parameters for this sample suggest that chemical conditions in the Rail Pond may allow natural formation of carbon disulfide. The semi-volatile organic compound bis(2-ethylhexyl)phthalate was detected in one sample. The compound is considered to be a sample contaminant introduced either during sampling or in the laboratory.

No VOCs, semi-volatile organic compounds, organochlorine pesticides, or PCBs were detected in seep samples from the site, with the exception of 1,2-dichloroethane detected in one sample from the Knoll Area. The 1,2-dichloroethane concentration was less than the most conservative screening level criterion.

Petroleum hydrocarbons were detected in one sample in the Knoll Area. The contamination may be related to petroleum hydrocarbons nearby or, alternatively, associated with heavy equipment traffic on the adjacent Knoll Area access road during the RI. Screening criteria are not available for petroleum hydrocarbons in surface water.

Few surface water and seep samples exceed conservative screening criteria concentrations for metals. Zinc slightly exceeded the criteria in one surface water sample from the Rail Pond. One seep sample in the Knoll Area exceeded the most conservative criteria for copper and zinc. This seep and one other in the Knoll area also exceeded the criteria for iron. The low frequency of detection indicates that these metals are not significant or pervasive in surface water at the site.

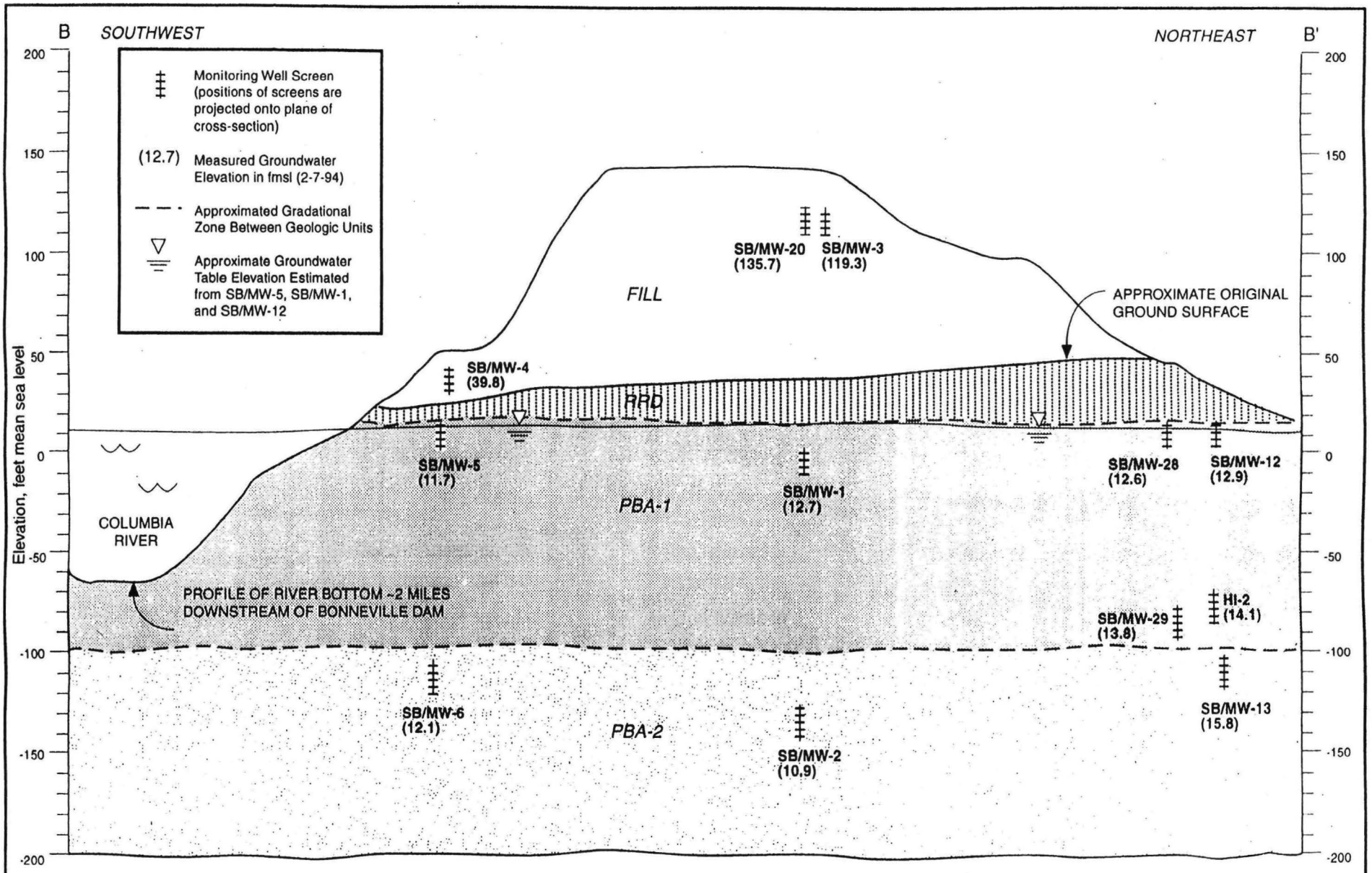
4.3.4 Groundwater

Two sampling rounds were conducted at 16 groundwater wells. Organic parameters were detected only in perched groundwater samples. Analytical results do not indicate any significant hydraulic connection between the perched groundwater and the underlying regional aquifer. No VOCs, semi-volatile organic compounds, organochlorine pesticides, PCBs, or petroleum hydrocarbons were detected in groundwater samples from the aquifer beneath the site.

Toluene and 1,2-dichloroethene were detected in one perched groundwater well at low concentrations. The two compounds were not detected in any seep or surface water samples from the site. These VOCs may be related to isolated occurrences of small quantities of contaminants within Hamilton Island fill materials. The concentrations reported for these compounds were well below the most conservative screening criteria concentrations. Acetone was detected in one sample, and is considered a sample contaminant introduced in the laboratory.

Petroleum hydrocarbons were detected in one perched groundwater well at a concentration slightly above the detection limit, and are probably related to TPH reported in one soil sample from the boring.

As with surface water, there were few exceedances of conservative screening criteria for metals in groundwater samples. Most exceedances of screening criteria are associated with samples exhibiting high total suspended solids from the first round of sampling, and include arsenic, lead, manganese, nickel, and vanadium. This is discussed further in Section 5.1.1.



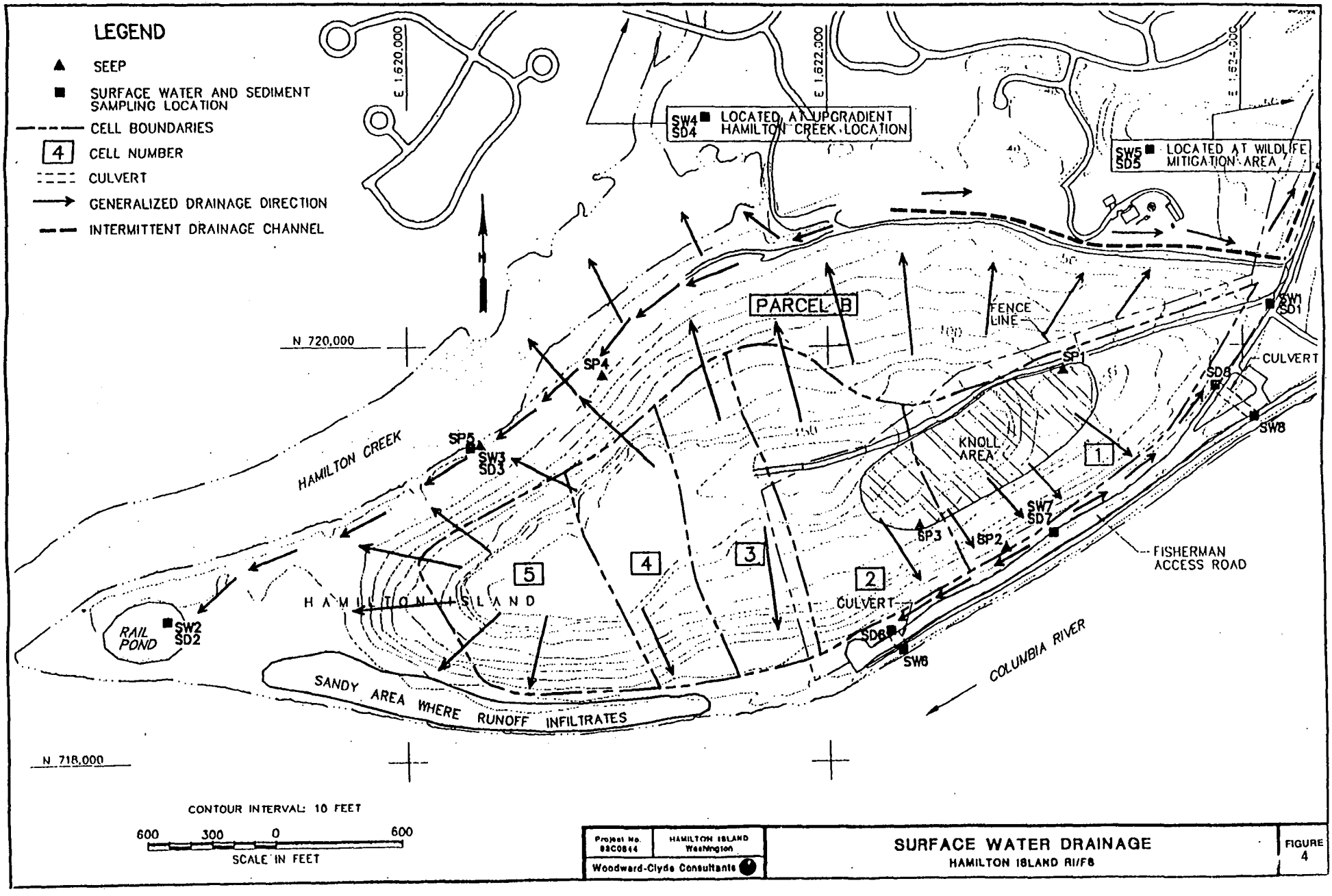
Vertical Scale 3/4" = 50'
Horizontal Scale 3/4" = 300'

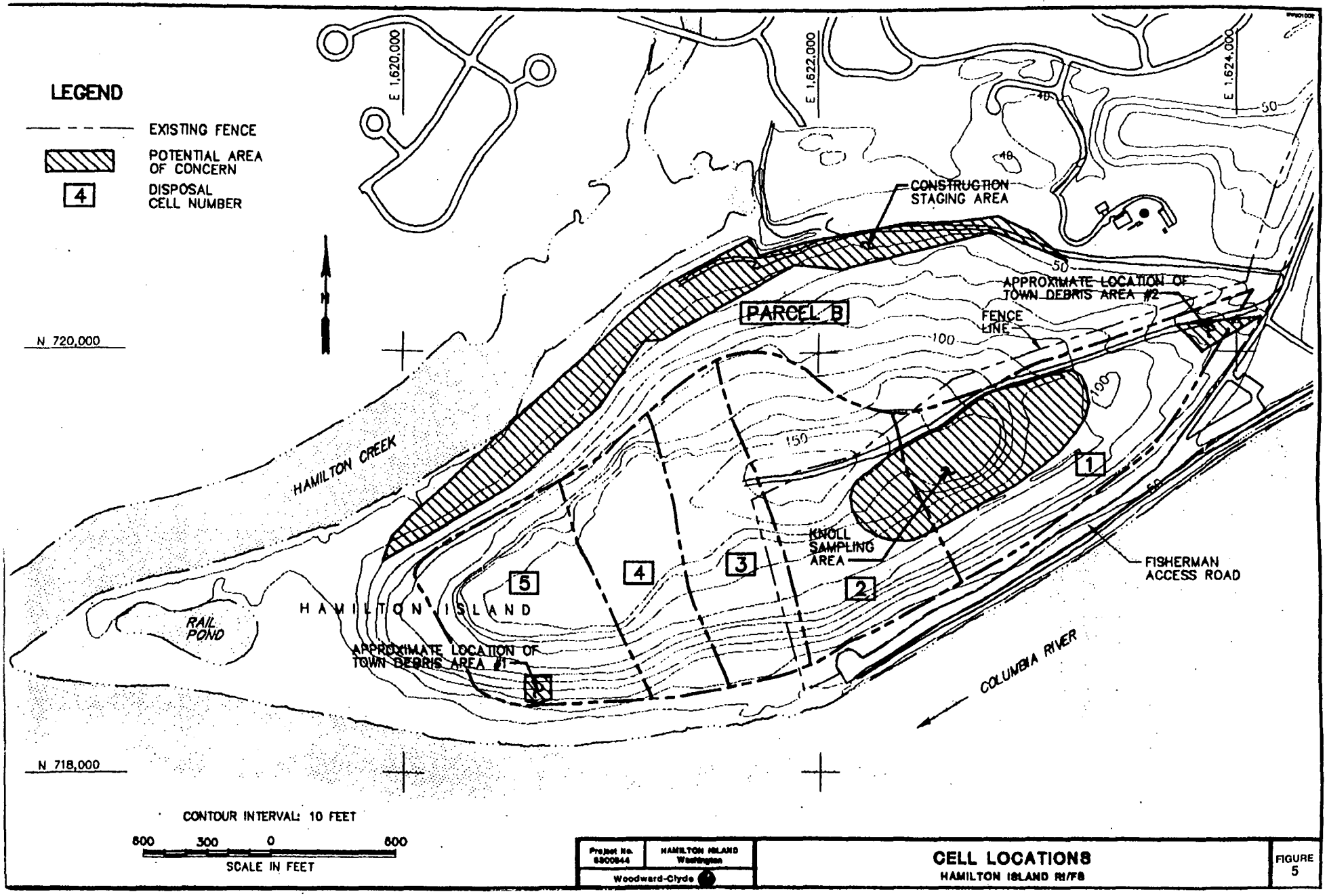
Project No. 93C0544/8000	HAMILTON ISLAND Washington
Woodward-Clyde	

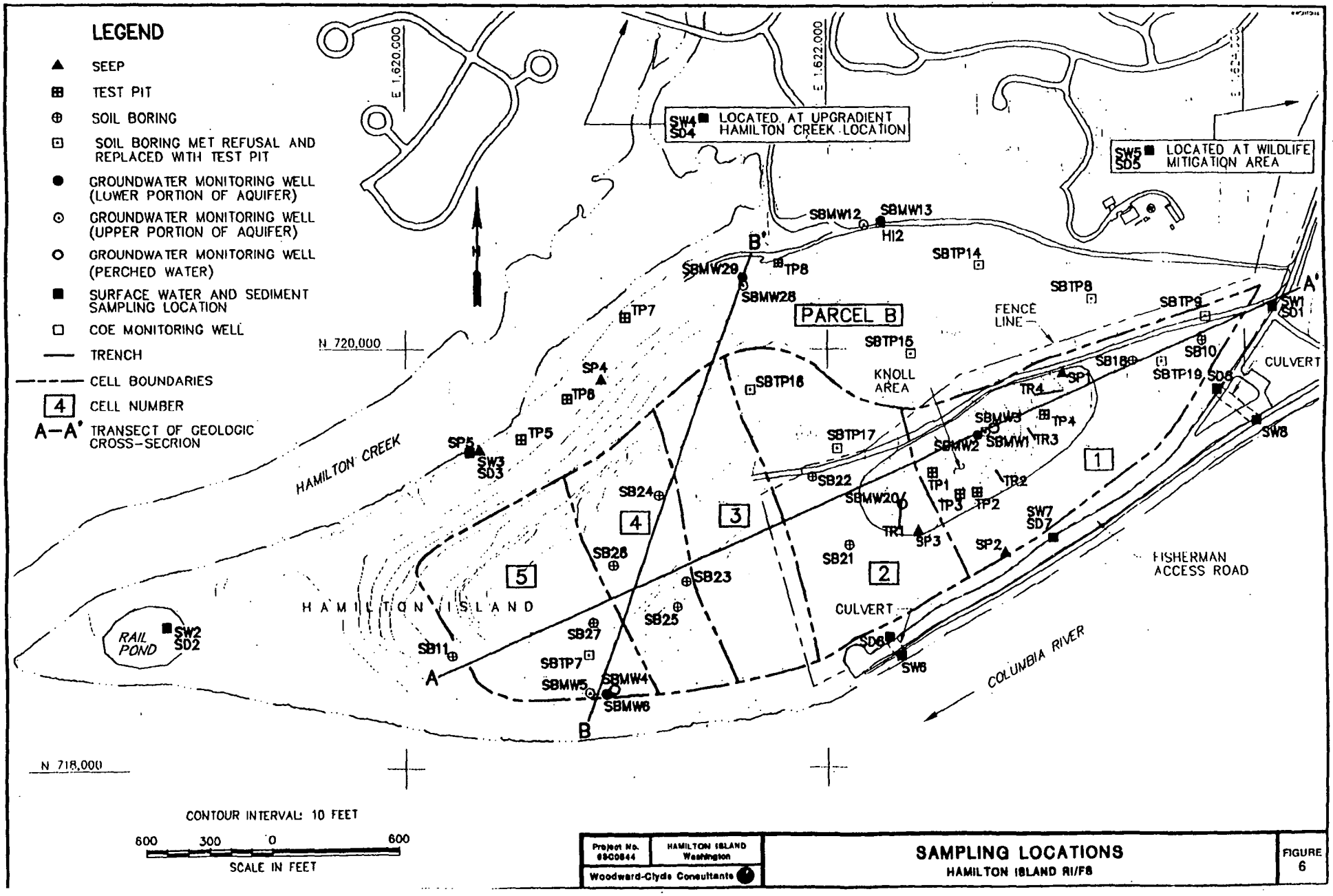
SCHEMATIC HYDROGEOLOGIC CROSS SECTION B TO B'
Hamilton Island RI/FS

FIGURE 3

GR037HI/01/4-94


LEGEND
SEEP
SURFACE WATER AND SEDIMENT SAMPLING LOCATION
CELL BOUNDARIES
4 CELL NUMBER
CULVERT
GENERALIZED DRAINAGE DIRECTION
INTERMITTENT DRAINAGE CHANNEL
E 1,620,000
E 1,622,000
E 1,622,300
SW4 SD4 LOCATED AT UPGRADIENT HAMILTON CREEK LOCATION
SW5 SD5 LOCATED AT WILDLIFE MITIGATION AREA
PARCEL B
FENCE LINE
SW1 SD1
CULVERT
SD6
SW8
SP1
SP4
SP5
SW3 SD3
HAMILTON CREEK
KNOLL AREA
1
SW7 SD7
SP3
SP2
FISHERMAN ACCESS ROAD
5
4
3
2
HAMILTON ISLAND
CULVERT
SD8
SW6
RAIL POND
SW2 SD2
COLUMBIA RIVER
SANDY AREA WHERE RUNOFF INFILTRATES
N 720,000
N 718,000
CONTOUR INTERVAL: 10 FEET
600 300 0 600
SCALE IN FEET
Project No. 92C0844
HAMILTON ISLAND Washington
Woodward-Clyde Consultants
SURFACE WATER DRAINAGE
HAMILTON ISLAND RI/FS
FIGURE 4


LEGEND
EXISTING FENCE
POTENTIAL AREA OF CONCERN
4 DISPOSAL CELL NUMBER
E 1,620,000
E 1,622,000
E 1,624,000
N 720,000
N 718,000
CONSTRUCTION STAGING AREA
APPROXIMATE LOCATION OF TOWN DEBRIS AREA #2
PARCEL B
FENCE LINE
HAMILTON CREEK
KNOLL SAMPLING AREA
FISHERMAN ACCESS ROAD
HAMILTON ISLAND
RAIL POND
APPROXIMATE LOCATION OF TOWN DEBRIS AREA #1
COLUMBIA RIVER
CONTOUR INTERVAL: 10 FEET
600 300 0 600
SCALE IN FEET
Project No. 6900844
HAMILTON ISLAND Washington
Woodward-Clyde
CELL LOCATIONS
HAMILTON ISLAND RI/FS
FIGURE 5



Project No. 93C0844	HAMILTON ISLAND Washington
Woodward-Clyde Consultants	

SAMPLING LOCATIONS
HAMILTON ISLAND RI/FS

FIGURE 6

5.0
SUMMARY OF SITE RISKS

Human health and ecological risk assessments were conducted for Hamilton Island. The risk assessments were conducted in accordance with EPA's Risk Assessment Guidance for Superfund, Volume I: Human Health Evaluation Manual and Volume II: Environmental Assessment Manual and EPA national guidance. The risk assessment methods and results are summarized in the following sections.

5.1 HUMAN HEALTH RISKS

The human health risk assessment evaluated potential risks associated with exposure to chemical contaminants from Hamilton Island. The assessment considered potential exposure to contaminants in groundwater, surface water, soil and sediment. Both carcinogenic (i.e., causing the development of cancer) and non-carcinogenic (i.e., direct toxic effects on organ systems, reproductive and developmental effects) risks were evaluated. Risks were estimated for current and future land use in the vicinity of Hamilton Island. The assessment estimated hypothetical risks for people residing or recreating at or adjacent to Hamilton Island.

To ensure that the potential health risks would not be underestimated, a conservative approach was used. Reasonable conservative estimates and assumptions were used to enhance confidence in the conclusions of the risk assessment. A screening-level approach was adopted that is consistent with EPA guidance for risk assessment and with project goals. Based on preliminary evaluation of data, EPA, Ecology and USACE agreed that a full baseline risk assessment was not warranted for this site. The screening-level risk evaluation is protective of human health because it is based on comparison of the maximum detected concentrations (which overestimates exposure concentrations) to EPA conservative risk-based screening values appropriate for long-term residential exposure. EPA's risk-based screening values are derived from standard EPA exposure assumptions for residential use and are calculated at the $1x10^{-6}$ exposure concentration for carcinogens and a Hazard Quotient (HQ) equal to 1.0 for non-carcinogens. Key steps in the risk assessment are outlined below.

5.1.1 Identification of Chemicals of Concern

Potential chemicals of concern (COCs) are waste-related chemicals at Hamilton Island that may pose health risks to humans who come into contact with them. COCs were identified through evaluation of RI sampling results for groundwater, surface water, soils and sediments. Potential chemicals of concern include organic compounds, some metals and petroleum products.

To identify COCs, maximum concentrations of potential chemicals of concern were compared to media-specific Risk Based Concentrations (RBCs). Chemicals whose maximum concentrations are below protective RBCs are not considered a health risk and are not evaluated further. Few potential chemicals of concern were detected. Most detected concentrations were below conservative (health-protective) screening criteria.

Analytical results from both surface and subsurface soil samples were compared to screening criteria. In soil, several carcinogenic polyaromatic hydrocarbons (PAHs) were detected in two samples. PAHs were below detection limits in all other soil samples. The individual concentrations somewhat exceed the MTCA Method B screening level, but they are below the EPA Region 3 screening level, except for benzo(a)pyrene, which exceed the EPA Region 3 screening criteria by a factor of 2.4 as shown in Table 1. The risk of this single benzo(a)pyrene occurrence using the very conservative EPA exposure parameters is only $3x10^{-6}$. Under CERCLA and the NCP, remediation is not required if cancer risks do not exceed $1x10^{-4}$. The COCs for soils are benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene and chrysene. Although manganese was detected in several soil samples in concentrations above the most conservative screening criteria, manganese is not considered an environmental contaminant at Hamilton island because it is naturally occurring at comparable concentrations.

Table 1. Chemicals At or Above Regulatory Standards in Soil Samples (*ppm)

Chemical	Total Number of Samples	Highest Level Measured	# Samples Above Standards	EPA Criteria	Washington State Standards
Benzo(a)anthracene	168	0.2	1	0.88	0.14
Benzo(a)pyrene	168	0.21	1	0.088	0.14
Benzo(b)fluoranthene	168	0.22	1	0.88	0.14
Chrysene	168	0.2	1	88	0.14

*ppm = parts per million or mg/kg

Analytical results of groundwater from shallow and deep wells in the regional aquifer were compared to screening criteria protective of long-term domestic use. Perched water on Hamilton Island is present in an insufficient quantity to sustain a yield of greater than 0.5 gallons per minute and as such is not considered a potential future drinking water source under the Washington State drinking water codes [WAC 173-340-720 (1)(a)(ii)] and MTCA [WAC 173-303-720]. Perched water therefore was not evaluated since comparison of perched water samples with criteria developed for the protection of drinking water are not applicable. Five metals - chromium, manganese, nickel, vanadium and arsenic - were detected in groundwater samples at concentrations exceeding conservative screening criteria for drinking water. With the exception of manganese, all exceedances are associated with unfiltered samples. All of these metals occur naturally in soils and rock and can be associated with suspended particulate or colloidal matter in groundwater. These metals are not considered groundwater contaminants. There were no volatile or semi-volatile compounds detected in groundwater at levels exceeding screening values. Specific chemicals in groundwater that were detected at levels that exceed screening criteria are listed in Table 2.

Table 2. Metals At or Above Regulatory Standards in Groundwater Samples (*ppm)

Metal	Total # of Samples	Highest Level Measured	# Samples Above Standards	EPA Criteria	Washington State Standards	Federal Drinking Water Standards
Arsenic	26	0.019	3	0.000038	0.00005	0.05
Chromium	26	0.12	1	0.18	0.08	0.1
Manganese	26	2.2	6	0.18	0.08	--
Nickel	26	0.31	1	0.73	0.32	0.1
Vanadium	26	0.27	2	0.26	0.11	--

*ppm = parts per million or mg/l

No chemicals were detected in surface water or seep water above conservative health-based screening values. The screening values are protective of human health assuming long-term ingestion of local fish. No chemicals were detected in sediments above conservative health-based screening values for soil ingestion.

5.1.2 Risk Characterization

Based on a screening comparison and toxicity assessment, the only COCs that exceed risk-based screening criteria were PAHs at two subsurface soil sampling locations. Although a few analytical results for some metals in unfiltered groundwater samples exceeded the screening criteria, the exceedances were small and the metals are not considered environmental contaminants in groundwater at Hamilton Island. Metals are therefore not considered COCs. The following discussion evaluates the potential health risk associated with PAHs detected in subsurface soils.

The presence of PAHs at these locations in concentrations somewhat above conservative screening criteria does not pose a risk to human health for the following reasons:

- PAHs were only detected in two soil samples, therefore the potential for exposure to concentrations above detection limit is extremely low. Negligible risk is associated with such limited exposure potential.

- The concentration of total carcinogenic PAHs is below the MTCA Method A cleanup level of 1 mg/kg.

- The samples in which PAHs were detected are field duplicate samples. One of these samples also had TPH detected at 620 mg/kg. TPH in the primary sample was detected at 100 mg/kg. The PAHs are probably related to the petroleum residues at that sample location. PAHs were not detected in either of the associated primary samples.

In conclusion, the very few chemicals that were detected in isolated samples above conservative screening criteria are consistent with background values (metals) or do not pose a human health threat because of their low concentrations well within the risk range in CERCLA, and low detection frequency and exposure potential (PAHs).

5.1.3 Human Health Risk Characterization Summary

Potential future residents and current recreational users are the primary receptors at the site. Residents would be exposed to chemicals detected via ingestion of soil and use of groundwater from the aquifer. The chief pathway of concern for recreational users would be exposure to site-related contaminants via fish ingestion.

Concentrations of chemicals detected in the samples from all the media were compared with screening-level criteria. The screening-level evaluation provides a conservative (health-protective) estimate of potential risk because 1) residential exposures to contaminated soil and groundwater were assumed, 2) conservative toxicity factors were used that are highly protective of sensitive populations, and 3) low target risk levels were applied in calculating screening-level criteria. Most detected concentrations were so far below screening-level criteria that potential human health risk is negligible. Where sample results exceeded screening-level criteria, the impact for adverse human health effects was discussed and shown to be below levels that may warrant remediation based on public health impacts.

5.2 ECOLOGICAL RISK ASSESSMENT

The Ecological Risk Assessment (ERA) assessed the potential for impacts to terrestrial and aquatic receptors from exposure to chemical contaminants from Hamilton Island. The primary objective of the ecological risk assessment was to perform a screening-level analysis to estimate the potential for adverse effects to plants and animals. The results of the ecological risk assessment were intended to support management decisions on whether remedial action is required for environmental protection.

The screening level approach used in the risk assessment is consistent with EPA guidance for evaluating ecological risk. Ecological risks are based on the evaluation of data from analysis of surface water, seepage water, groundwater, sediment, and surficial soil samples collected during the RI. Data was compared with appropriate environmental benchmarks for each media. Benchmarks included EPA Ambient Water Quality Criteria (AWQC) for protecting freshwater life; dietary toxicity values; available LOEL, NOEL, LD50 and TLM96 values; and sediment Threshold Value Guideline from sources worldwide.

5.2.1 Exposure Assessment

Potential receptors were identified as those plant and animal species likely to be exposed to chemicals associated with chemical contaminants from Hamilton Island. The Ecological Conceptual Site Model (ECSM) developed for this RI included the aquatic habitat in the Columbia River and Hamilton Creek and the terrestrial habitats on Hamilton Island.

The potentially exposed terrestrial habitats at the Hamilton Island NPL site include grasslands, shrub/scrub, and wetland areas at seepage points and in the Wildlife Mitigation Area. The primary inorganic-media exposure pathways for the terrestrial biota in the terrestrial habitats are from soil and seepage water. The principal terrestrial receptor categories are small birds and small mammals. These biota may be primarily exposed via direct contact, incidental ingestion of surface soil, direct ingestion of drinking water, and direct ingestion of forage or prey containing chemicals. Larger mammals may also be exposed, but the sum of their exposure is not as comprehensive as that experienced by the small mammals and birds.

The potentially exposed aquatic habitats include the Columbia River, Hamilton Creek, and the Rail Pond. Primary inorganic exposure pathways to the aquatic habitats are associated with water and sediment. Aquatic biota that may absorb contaminants from water or sediment may represent a secondary food web exposure pathway to other aquatic consumers that may eat contaminated prey. The principal aquatic receptor categories are benthic macroinvertebrates, fish, and amphibians. These biota may be continually exposed to chemicals through direct contact, direct ingestion, incidental ingestion of water and sediment, and ingestion of forage or prey. In addition, these habitats support an abundance of waterfowl, semi-aquatic mammals (beaver, muskrats, river otter), and aquatic feeding raptors (osprey and bald eagle). These biota are considered potential receptors. They are intermittently exposed to water and sediment, but all are primarily aquatic feeders and may be exposed to chemicals in forage or prey.

5.2.2 Ecological Chemicals of Concern

Potential COCs are waste-related chemicals at Hamilton Island that may pose a risk to terrestrial and aquatic receptors who come into contact with them. COCs were identified

through evaluation of RI sampling results for groundwater, surface water, seeps, soils and sediments.

To identify COCs, maximum concentrations of chemicals of potential concern were compared to ecological "benchmarks." Chemicals whose maximum concentrations are below protective benchmarks are not considered a risk and are not evaluated further. Owing to the different areas of concern at the Hamilton Island NPL site and the five environmental media, the COCs at the various areas are expected to vary. Therefore, separate COC determinations were performed for the media associated with each potentially exposed habitat.

Surface water, seepage water, and sediment represent potential exposure media to aquatic biota and to terrestrial biota using aquatic habitats. Seepage of groundwater into the Columbia River or Hamilton Creek may contribute chemicals to the surface water exposure medium. Therefore, groundwater data were also screened to identify aquatic COCs. The analytical results from samples collected in each habitat were evaluated to identify preliminary COCs. All the analytical data for samples collected at potential exposure points were compared to ecological benchmarks. The COC screening was performed for the following habitats and the potential exposure media specific to each habitat:

- Grasslands: Surface Soil; Seepage Water, Groundwater, Surface Water
- Shrub/Scrub: Surface Soil; Seepage Water; Groundwater; Surface Water
- Wetlands: Seepage Water; Groundwater; Surface Water; Sediment
- Rail Pond: Surface Water; Sediment
- Columbia River: Seepage Water; Groundwater; Surface Water; Sediment
- Hamilton Creek: Seepage Water; Groundwater; Surface Water; Sediment

No COCs were identified by the COC screening.

5.2.3 Ecological Risk Characterization Summary

The purpose of the evaluation was to identify potentially complete exposure pathways and incomplete exposure pathways. Potential exposure of key receptors is based on the presence of all of the six basic components of a complete exposure pathway. If one of the following

components is missing, the pathway is incomplete, exposure cannot occur and there is no risk to biota:

- Source of chemicals (e.g., Hamilton Island NPL Site)
- Release mechanism (e.g., site runoff)
- Exposure medium (e.g., soil and seepage water)
- Exposure point (e.g., Hamilton Creek surficial sediment)
- Intake or exposure mechanism (c.g., ingestion of seep water)
- Key Receptor Organisms (e.g., osprey)

The ERA identified the presence of important terrestrial and aquatic ecological resources on Hamilton Island, and in the adjacent Columbia River and Hamilton Creek. Potential exposure pathways to key receptor organisms were identified for each habitat, but were shown to be incomplete because no site-related sources were identified. A rigorous chemical screening was performed on the chemicals detected in all media by comparing the analytical results to stringent ecological benchmarks. Several minor exceedances of benchmark values were associated with sampling artifacts and laboratory contaminants, but these were not confirmed as COCs. The exposure assessment did not identify any site-related source of COCs at exposure points for key receptor organisms. Based on these findings, the Hamilton Island NPL site does not currently represent a risk to ecological resources in the local environment. This conclusion is based on the available data and the assumptions used in performing the risk assessment.

6.0
DESCRIPTION OF THE SELECTED REMEDY

EPA has determined that no remedial action is necessary at Hamilton Island to ensure protection of human health and the environment. This decision is based on the results of the human health and ecological risk assessments, which determined that conditions at the site pose no unacceptable risks to human health or the environment. Additional monitoring and administrative controls are not necessary. The USACE and EPA, in consultation with Ecology, have jointly determined that no remedial action is necessary at this site. Ecology concurs with this determination.

7.0
HIGHLIGHTS OF COMMUNITY PARTICIPATION

Community involvement was solicited throughout the RI/FS process. A discussion of community involvement during the RI is presented in Section 7.1 and is followed by a summary of community participation during selection of the remedy in Section 7.2.

7.1 COMMUNITY RELATIONS DURING THE RI

Local citizens, public officials and public interest groups were interviewed in June and July 1993 to identify potential concerns and public information needs associated with Hamilton Island. This information was used to develop a Community Relations Plan (CRP) that met the specific needs of the local communities.

The USACE finalized the CRP in September 1993 as part of the management plan for the Hamilton Island RI/FS. The CRP was designed to promote public awareness of the investigations and public involvement in the decision-making process. The following activities were undertaken to address community concerns and public information needs.

A community advisory committee was established in October 1993. This committee met periodically with the USACE, EPA and Ecology to discuss the results of the work in progress, upcoming activities and to provide the committee an opportunity to present their concerns. Committee meetings were held at the North Bonneville City Hall on the following dates: October 21, 1993; April 12, 1994; August 2, 1994; and November 29, 1994.

News releases and information papers were distributed for public review. The news releases and information papers provided summaries of work in progress, results to date and upcoming activities, and also solicited public involvement. The news releases were provided to local radio, television and newspapers (including the Oregonian, Skamania County Pioneer and Camas Washougal Post Record). About 250 copies of the information papers were provided to the community and local agencies. The information papers were also placed at the information repositories. The distribution schedule of the news releases and information papers is given in Table 3.

Table 3. Distribution Schedule of News Releases and Information Papers

Date	Document
July 25, 1991	News Release
August 1991	Information Paper
January 1993	Information Paper
January 21, 1993	News Release
July 23, 1993	News Release
September 1993	Information Paper
September 3, 1993	News Release
October 1993	Information Paper
October 1, 1993	News Release
February 1994	Information Paper
April 1994	Information Paper
April 15, 1994	News Release
May 12, 1994	News Release
July 1994	Information Paper
July 28, 1994	News Release
October 18, 1994	News Release
November 1994	Information Paper
November 4, 1994	News Release

To promote community awareness of RI/FS activities, a public display and public information repositories were established in the fall of 1993. The public display is located at the North Bonneville City Hall. It has been updated twice to reflect current project status. The information repositories contain primary site documents and are placed at the following six locations:

- City Hall - North Bonneville, Washington
- Community Library - Stevenson, Washington
- Skamania County Courthouse - Stevenson, Washington
- Bonneville Dam Project, Visitor Centers in Oregon and Washington
- Administration Building, Warm Springs Reservation - Warm Springs, Oregon

In accordance with Section 113 of CERCLA, an Administrative Record was established to document the basis for the selected remedy. The Administrative Record is available for public review at North Bonneville City Hall and the USACE Portland District Office.

7.2 COMMUNITY RELATIONS TO SUPPORT THE SELECTION OF REMEDY

The public was given the opportunity to participate in the remedy selection process, in accordance with Sections 113 (k)(2)(B)(i-v) and 117 of CERCLA. The Proposed Plan, which summarized the RI results and described the preferred alternative, was mailed to approximately 250 interested parties on November 4, 1994. The USACE distributed a news release to local media on November 4, 1994 to provide public notice of the distribution of the Proposed Plan and announce the public meeting and public comment period.

A 30-day public comment period was held from November 7 to December 9, 1994. No requests for extension were received. A public meeting was held on November 29, 1994. Oral and written comments were considered by EPA, USACE and Ecology in selecting the no further action alternative. Responses to written comments, and verbal comments from the public meeting are included within the Responsiveness Summary (Section 9.0).

8.0
DOCUMENTATION OF SIGNIFICANT CHANGES

The Proposed Plan for Hamilton Island was released for public comment on November 4, 1994. The Proposed Plan identified No Action as the selected remedy for the site. Public comments on the Proposed Plan were evaluated at the end of the 30-day comment period and it was determined that no significant changes to the Proposed Plan were necessary.

9.0
RESPONSIVENESS SUMMARY

The public comment period on the Proposed Plan was from November 7 to December 9, 1994. The Proposed Plan was distributed to over 250 agencies and individuals. One set of written comments was received and is included in Appendix A. A public meeting was held on November 29, 1994, to explain the Proposed Plan and solicit public comments. Several questions were asked during the formal comment period of the public meeting. The transcript of the public meeting is available in the Administrative Record and information repositories. This summary is a response to written and verbal questions and comments made during the public comment period.

In this summary, each comment is followed by its corresponding response. Verbal comments and responses from the public meeting are summarized for clarity. Additional responses to verbal comments are provided to further clarify responses given in the public meeting.

9.1 WRITTEN COMMENTS

FEDERAL AGENCIES

DEPARTMENT OF HEALTH AND HUMAN SERVICES -- PUBLIC HEALTH SERVICE, Agency for Toxic Substances and Disease Registry

1. **Comment**: *This letter is in response to the Proposed Plan for Hamilton Island Superfund Site. As you are aware, the Agency for Toxic Substances and Disease Registry released a public health assessment for Hamilton Island Landfill on August 31, 1993. From the Proposed Plan, we believe that environmental work accomplished since that time has addressed recommendations that we made concerning further characterization and analysis of sediments in surrounding creeks to address food chain issues.*

Response: Comment noted.

2. **Comment**: *However, we are not aware that one of our concerns has been met. We recommended that a private well survey to identify private wells in the landfill area be carried out and that a representative number of the private wells nearest the landfill be sampled. Although the contaminants found in groundwater are low in concentration, we are concerned that contaminants could still reach nearby wells. At the time of the public health assessment, little information was available to address the likelihood of contaminants reaching the private wells. Without sampling information on the private wells or the placement of monitoring wells between the landfill and the wells, the question remains open.*

Response: During the preparation of the Management Plan for the Remedial Investigation, a survey of all wells in the vicinity of Hamilton Island was performed. The well survey identified nine private wells in the North Bonneville area that could be used for drinking water. Two of the wells closest to Hamilton Island were sampled during the Remedial Investigation. In addition, the golf course irrigation well which is the private well closest to Hamilton Island was sampled. The city of North Bonneville's municipal supply well was also sampled. All these wells are presumably drawing from the single regional aquifer that lies beneath Hamilton Island. The gradient in this aquifer fluctuates with the level of water in the river, but the primary gradient of the aquifer is toward the river. All the private wells are farther from the river than Hamilton Island and presumably upgradient from the site, therefore, it is unlikely that contamination from Hamilton Island, if it existed, would reach these wells. In addition, four monitoring wells were installed at the edge of the landfill between the landfill and private wells.

Results of groundwater sampling indicated very low levels of metals slightly exceeding MTCA Method B standards in the aquifer beneath the site and in off site wells. Most of these metals are attributed to sediment in the samples, and not from Hamilton Island. There were low levels of organic parameters found in water within the fill on site, but these were not detected in the aquifer beneath the site. Therefore, these results do not indicate any significant hydraulic connection between the perched groundwater and the underlying aquifer, and no route of exposure to people using the aquifer.

9.2 VERBAL COMMENTS

PRIVATE CITIZEN COMMENTS PRESENTED AT THE PUBLIC MEETING

3. **Comment:** *I understand that some of the contamination that was found in the knoll area was to be removed. Has that been done, or is that yet to be done?*

Response: When petroleum contamination was found, an additional investigation was performed at the request of the State of Washington. The excavations where contamination had been detected were reopened to look for contamination. There was no pervasive contamination found. There was a lot of debris. The intent of the investigation was to identify and remove extensive contamination. Only a small amount of contaminated soil was found mixed with a large amount of debris. There was no evidence of pervasive contamination or contamination that could be easily removed. The USACE and the State of Washington consulted and decided no further action was necessary.

4. **Comment:** *And so that is closed, and that area is considered safe now?*

Response: Yes. The material was placed back in the hole because we could not find pervasive contamination.

Additional Response: The USACE intended to remediate any areas where non-naturally-occurring chemicals in soils posed a threat to human health and the environment. Two locations in the knoll area were investigated after the initial results indicated soils with petroleum hydrocarbons at values above State of Washington standards. Low levels of petroleum hydrocarbons found in soil during the additional investigation were located in small isolated areas, and mixed with woody debris. The woody debris may also have caused interferences that contribute to elevated values in the laboratory analysis. The decision was made with the State of Washington to place the 107 cubic yards of excavated soil and debris back into the exploratory trenches because the occurrences of soils with petroleum hydrocarbons above Washington State standards were isolated in small areas that could not be practically remediated.

5. **Comment:** *There has been some effort at reforestation. Is there any possibility that trees could be planted on Hamilton Island? It really is pretty bald looking.*

Response: There was once a plan to reforest the island. Some attempt was made to plant trees on it at one time. Most of the trees didn't take hold for a variety of reasons. Assuming that Hamilton Island is retained in government ownership and is used for wildlife mitigation purposes, the USACE and the U.S. Fish and Wildlife Service will discuss what types of planting might be appropriate to enhance the wildlife mitigation.

6. **Comment:** *If that's done, will there be public input into that process or not?*

Response: Yes.

Additional Response: The final plan for restoration of Hamilton Island will be developed by the USACE with the U.S. Fish and Wildlife Service. The USACE hopes to use Hamilton Island as wildlife mitigation land for the Bonneville Second Powerhouse. Some preliminary plans have been drafted for Hamilton Island, but will be finalized with USFW and public input.

7. **Comment:** *What is the main cause that trees and shrubbery don't grow on the island there like they do on the rest of the hills out here?*

Response: Water is an important factor. The areas that are now well vegetated are essentially where the seeps are, where there is water on the surface most of the time. Possibly, the climate doesn't have enough water to support trees, or at least to get them started. The trees also may not have been planted or fertilized properly.

8. **Comment:** *The dump area east of town, Parcel 2, we tried there and they didn't stick either.*

Response: Comment noted.

9. **Comment:** *Perhaps it's a lack of nutrients in the soil.*

Response: No topsoil was placed on Hamilton Island or Parcel 2 east of town. A small topsoil stockpile was placed on the west end of Hamilton Island, but there was no topsoil placed over the rest of Hamilton Island. So it was basically not a good soil surface.

Additional Response: The primary reason tree plantings did not survive is because of lack of water. In most areas water percolates rapidly into the mounded fill and away from plant roots. Not enough water was initially used to allow the plants to become established. Other factors include poor nutrition, including possible lack of fertilizer and poor soil conditions.

10. **Comment:** *The fence will come down in 1995?*

Response: Yes. When the Record of Decision is signed and the site is nominated for removal from the National Priorities List, the fence will be taken down.

11. **Comment:** *You mentioned, more or less, a land trade-off to the optimum town site. There is land that isn't in the city that was in the optimum town site. In exchange for Hamilton Island, what are some of those areas that are going to be turned over, maybe, to the Town of North Bonneville, or how are you going to work that out?*

Response: The question refers to parcels of land that were identified in the initial legislation (Defense Appropriation Act of 1992). They are known as Parcel 1, which is in the area of Hamilton Island, Parcel B, which is the northern half of Hamilton Island, and Parcels C, 2, and H. Under the proposed legislation that was attached to the Water Resources Development Act of 1994, Hamilton Island, essentially with Parcels 1 and B, would be retained in government ownership, except for two spikes at the north extremity of Parcel B, that would be given to the town. Parcel C, Parcel 2, and a portion of Parcel H could be given to the town as well. An archeological site on Parcel H would be retained by the government, but the rest of it would be given to the town.

Additional Response: As a result of legislation passed in the Defense Appropriation Act of 1992, the USACE is required to sell Parcels 1, 2, B, C, and a portion of H to the city of North Bonneville. The terms of this legislation have been challenged by the Department of Justice and portions of the law are not in effect. Replacement legislation was drafted as a result of negotiations between the city of North Bonneville, the Department of Justice, the

USACE and Representative Jolene Unsoeld's office. The new legislation would settle all outstanding claims and differences over land ownership. Under the new legislation that was attached to the 1994 Water Resources Development Act (WRDA), most of Parcels 1 and B would remain in government ownership. The other parcels would be deeded to the city without cost. Because WRDA did not pass in 1994, the legislation must be reintroduced. Other congressional proponents are being sought for this legislation.

APPENDIX A
WRITTEN COMMENTS ON PROPOSED PLAN

DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

Agency for Toxic Substances
and Disease Registry
Atlanta GA 30333

DEC 05 1994

Mr. Norman Tolonen
Project Manager CENPP-PM
Portland District
U.S. Army Corps of Engineers
P.O. Box 2946
Portland, Oregon 97208-2946

Dear Mr. Tolonen:

This letter is in response to the Proposed Plan for Hamilton Island Superfund Site. As you are aware, the Agency for Toxic Substances and Disease Registry released a public health assessment for Hamilton Island Landfill on August 31, 1993. From the Proposed Plan, we believe that environmental work accomplished since that time has addressed recommendations that we made concerning further characterization and analysis of sediments in surrounding creeks to address foodchain issues.

However, we are not aware that one of our concerns has been met. We recommended that a private well survey to identify private wells in the landfill area be carried out and that a representative number of the private wells nearest the landfill be sampled. Although the contaminants found in groundwater are low in concentration, we are concerned that contaminants could still reach nearby wells. At the time of the public health assessment, little information was available to address the likelihood of contaminants reaching the private wells. Without sampling information on the private wells or the placement of monitoring wells between the landfill and the wells, the question remains open.

Please let us know if sampling has been carried out or if adequate hydrogeologic information has been obtained to address the question. If you have any questions, please call me or Ms. Diane Jackson at (404)639-6070.

Sincerely yours,

Gary H. Campbell

Gary H. Campbell, Ph.D.
Chief, Army Section
Federal Facilities Assessment Branch
Division of Health Assessment
and Consultation